LEGAL CONVERGENCE OF EAST AND WEST IN CONTEMPORARY AMERICAN WATER LAW

BY

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Before setting out on this Article, I would like to take this opportunity to express my sense of privilege in being able to write in the company of so many scholars and friends in tribute to the many contributions of Janet Neuman and James Huffman to the fields of water law and property rights more generally. I always have benefitted when reading their works.

Legal instrumentalism and legal convergence, two legal constructs, describe how American water law has developed over time. A study of early Eastern and Western water law shows that both systems are instrumentalist at their core and evolved to suit pressing developmental needs. Early on in the East, law was created to protect water use for millers, who used mills to generate power. In the West, riparian systems of the East were rejected in favor of a system that met the needs of settlers in more arid environments. Legal convergence is a concept suggesting that law governing various fields converges over time—the legal solution best adapted to solving a problem becomes the dominant approach. Legal convergence, like instrumentalism, supports the notion that in matters of societal importance, such as allocation of water resources, the law will converge around the most effective solutions. This Article explores a number of more contemporary converging, parallel developments in Eastern and Western water law where both regimes have come together despite their fundamental, underlying differences in water rights formulation. These include integration of surface water and groundwater and obtaining full utilization of the resource, elimination of situs of use restrictions, and protection of instream and other communitarian values—each example demonstrates that both regions are adopting similar responses to reach a common goal to utilize water resources to meet as many water needs as possible. This Article predicts that the next major change in Eastern and Western water law will be a convergent approach to water triage during episodes of regional water shortage.

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I. INTRODUCTION

Consider two constructs—legal instrumentalism and legal convergence—and their possible application to American water law. In a variety of ways I have long expressed the view that water law develops in an instrumentalist manner that permits society to make the most important contemporary uses of water resources.[1] As an initial form of convergence, a brief recollection of the formative stages of Eastern and Western water law shows them both to be instrumentalist to the core—rejecting law that did not suit the needs of the then-pressing situation in favor of water law that supported developmental needs.

In the East, for example, when a vitally important need was the repeated use of water for generating power for milling in the early nineteenth century, the water law was crafted, legislatively and judicially, to permit seriatim use of the water by many mills as the water flows from its headwaters to the sea.[2] The so-called Mills Act[3] "solved" the problem of enjoinable trespass of adjacent parcels inundated by mill ponds by granting the equivalent of private condemnation to the millers.[4] Similarly, case law allowed new entrant millers to reasonably alter the flow regime, actions that would have been enjoinable by adversely affected existing millers under either English natural flow riparianism or a rule based on prior occupancy.[5] Physically, this occurred when the upper, later-in-time miller interdicted the flow completely to fill their mill pond, preventing downstream users from

1 *See, e.g.*, JOSEPH L. SAX, BARTON H. THOMPSON, JR., JOHN D. LESHY & ROBERT H. ABRAMS, LEGAL CONTROL OF WATER RESOURCES 39–47 (4th ed. 2006); Robert H. Abrams, *Charting the Course of Riparianism: An Instrumentalist Theory of Change*, 35 WAYNE L. REV. 1381, 1385–86 (1989). *See generally* ROBERT SAMUEL SUMMERS, INSTRUMENTALISM AND AMERICAN LEGAL THEORY (1982) (examining the theory of "pragmatic instrumentalism," which views legal rules and the law in general as a series of tools created to serve practical ends and achieve societal goals).

2 *See* Abrams, *supra* note 1, at 1392–94.

3 *See, e.g.*, Act of Feb. 27, 1796 (Mills Act), 1795 Mass. Acts 443, *available at* http://archives.lib.state.ma.us/actsResolves/1795/1795acts0074.pdf.

4 *Id.* § 1, 1795 Mass. Acts at 443.

5 *See* Abrams, *supra* note 1, at 1395–96 (describing *Mason v. Hoyle*, 14 A. 786 (Conn. 1888), as a "Solomonic" decision that embraced reasonable use riparianism, which marked a departure from the "ill-fitting" doctrines of natural flow riparianism and the rules of priority).

having enough water to drive their mill.[6] In the nineteenth century West, if the most important use of water was to support irrigation of the early settlers of the West, where rainfall is scarce and streams are few and far apart, the potentially "inherited" riparianism of the East had to be rejected in favor of a system that met the needs of those settlers. It took the Territorial Colorado Supreme Court in 1872 only a single phrase in prefacing its decision in *Yunker v. Nichols*,[7] to announce things necessarily were going to be different when it penned the words, "[i]n a dry and thirsty land."[8] The necessity of supporting societally vital use of water away from riparian locations trumped even the most traditional private property rights of neighboring landowners. Functioning similarly to the mill acts in the East, *Yunker* recognized the need to have private rights of way to transport water to its place of use in the West by subjecting intervening landowners between the stream and situs of use to servitudes in favor of those using the water resource.[9] In almost all western states the same imperative led to the eventual rejection of riparianism in favor of prior appropriation.[10] The first and most eloquent statement of that radical departure from riparianism was judicially announced in 1882 in the landmark case of *Coffin v. Left Hand Ditch Co*.[11] Thus, instrumentalism has been alive and well in all branches of American water law for centuries.

The concept of legal convergence suggests that the law governing various legal fields tends to converge over time.[12] Sovereign jurisdictions are not legally compelled to follow each other's lead, but over time, they tend to do so.[13] Without pretending to be a trained comparativist, I would describe one of the principal theories supporting convergence as a sort of legal Darwinism. The legal solution that is best adapted to solving the problem eventually becomes the dominant approach that out-competes less robust legal solutions.[14]

Even a moment's reflection on those two constructs—instrumentalism and a Darwinist-leaning theory of legal convergence—reveals their underlying common ground. Both exhibit a confidence that in matters of

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6 *See, e.g.*, Martin v. Bigelow, 2 Aik. 184, 185 (Vt. 1827); Mason v. Hoyle, 14 A. 786, 788, 790 (Conn. 1888). An ancillary problem in *Mason v. Hoyle* was the fact that when the water was released by the upstream miller, it was done so in larger than usual amounts that overflowed the capacity of lower mill seats.

7 1 Colo. 551 (1872).

8 *Id.* at 553, 555 (granting private condemnation of rights of way to bring water to nonriparian parcels).

9 *See* Abrams, *supra* note 1, at 1394–95, 1400 n.63.

10 *See id.* at 1389–90 (describing the western states' shift from riparianism to prior appropriation as "the most dramatic example of 'fixing' 'broken' water law").

11 6 Colo. 443, 447 (1882).

12 *See* Lawrence M. Friedman, *Borders: On the Emerging Sociology of Transnational Law*, 32 STAN. J. INT'L L. 65, 72 (1996) (defining convergence as "the tendency of legal systems, or parts of legal systems, to evolve in parallel directions").

13 *See id.*; William Blumenthal, *The Challenge of Sovereignty and the Mechanisms of Convergence*, 72 ANTITRUST L.J. 267, 273 (2004) (discussing the inherent voluntariness of convergence of international laws regarding the merger review process in corporate law).

14 *See* Friedman, *supra* note 12, at 72–74 (describing unplanned, evolutionary norms).

societal importance, such as the allocation of scarce water resources, the law will gravitate toward and converge on the most effective legal doctrines and solutions.[15] On the surface, of course, claiming an instrumentalist convergence of East and West in American water law is outlandish. The two regions could scarcely have water law that is founded on more divergent organizing principles. The entire water economy of the West is cantilevered precariously on the water rights created on the basis of priority of use.[16] Much of the East still adheres to the vaguely defined water sharing required by common law reasonable use riparianism. Since the outcome in any particular case of user conflict is so fact-intensive and hard to predict,[17] as the competition for water increases, a number of states are adopting administrative permit systems, usually called "regulated riparianism,"[18] that award users durationally limited permits to use specified quantities of water for the expressly permitted uses.[19] In specifying quantities, type of use, and place of use, regulated riparianism borrows some of the hallmarks of water rights created under prior appropriation. Regulated riparianism remains true to its roots, however, by maintaining the vernacular and conceptual underpinnings of reasonable use that is associated with riparianism; uses must be "reasonable" to serve as the basis for obtaining a permit, and what is reasonable takes into account the state of the water source and the demands of others for its use.[20] At its core, however, regulated riparianism separates itself from prior appropriation because the usufructuary rights it creates are for a limited time, so that when permits expire new entrants are in a position to seek allocation of the scarce water resource on the basis of a single set of standards. Like the reasonable use riparianism from which it emerged, regulated riparianism assesses permit applications with reference to current conditions on the watercourse, permitting reallocation of the water on a rolling basis.[21]

Despite their ingrained historic and systemic differences, there are several ways in which both East and West can be seen to be facing similar problems and have adopted similar legal responses that accomplish the

15 *See generally* Lewis A. Kornhauser, *The Great Image of Authority*, 36 STAN. L. REV. 349, 361 (1984) (explaining that instrumentalism means that a society adopts those legal rules that efficiently promote a particular goal); Dimitry Kochenov, *On Options of Citizens and Moral Choices of States: Gays and European Federalism*, 33 FORDHAM INT'L L.J. 156, 169–70 (2009) (advocating legal convergence to address the "most important issues, particularly related to human rights").

16 *See* A. Dan Tarlock & Sarah B. Van de Wetering, *Growth Management and Western Water Law: From Urban Oases to Archipelagos*, 14 HASTINGS W.-NW. J. ENVT'L L. & POL'Y 983, 996–98 (2008).

17 *See, e.g.*, Tunison v. Harper, 690 S.E.2d 819, 820–21 (Ga. 2010) (discussing expanded irrigation use in competition with maintenance of pond's water level for fish habitat and aesthetic enjoyment).

18 WATER LAWS COMM., AM. SOC'Y OF CIVIL ENG'RS, THE REGULATED RIPARIAN MODEL WATER CODE iv–v (Joseph W. Dellapenna ed., 1997). When published, the Model Code listed 17 riparian jurisdictions as having adopted regulated riparianism. *Id.* at viii.

19 *See id.* at 272–73.

20 *Id.* at 236–41.

21 *See, e.g.*, A. DAN TARLOCK, LAW OF WATER RIGHTS AND RESOURCES § 3:97 (2011).

same result in the two different legal paradigms. The nineteenth century examples, cited earlier, are a good example of parallel legal developments (granting water users a de facto power of private condemnation) in the two systems, solving similar problems (third party property rights) that otherwise would thwart critical water-based development. This Article seeks to explore a small number of more contemporary converging or at least parallel developments of the water law in the East and West.

The convergence is not total and there is virtually no likelihood that the West will ever abandon prior appropriation or that the East will adopt a system in which priority is determinative. Nevertheless, this Article will survey three major areas where important parallel adaptations have been accomplished or are underway. These are:

- Integration of surface water and groundwater and obtaining full utilization;
- Elimination of situs of use restrictions; and
- Protection of instream and other communitarian values.

Each of the developments is chosen to exemplify a slightly different dynamic: the first where both doctrines had to adapt to hydrologic reality, the second and third, where riparianism and then prior appropriation effectively repudiated a fundamental principle of their system and adopted the position that had long been a tenet of the other system.

In discussing the responses of East and West in each of these areas, it is necessary to keep in mind that water law is primarily state law, so that it is likely that the course followed by one state in a region will vary at least slightly from the course taken by other states in the region. Similarly, it is actually the case that not all states in either region have resolved the problems presented in the areas being reviewed. Rather than cataloging each state's approach, what I will do is treat the "law" of the East as being embodied in the American Society of Civil Engineers (ASCE) Regulated Riparian Model Water Code, since that is the model to which I think the states of the East will gravitate.[22] In the West, I will give examples of adaptations in different states that I think exemplify the ability of prior appropriation systems, within their doctrinal contexts, to address the problem areas in the same way as does the East.

II. INTEGRATING LEGAL ENTITLEMENTS TO USE SURFACE WATER AND GROUNDWATER AND TWO INSTRUMENTALIST SOLUTIONS TO THE LINKED PROBLEM OF FULL UTILIZATION

In 1843, the renowned English case of *Acton v. Blundell*[23] included the famous passage explaining that the movement of groundwater was unknowable and, therefore, there could be no legal consequence associated with use of groundwater.[24] That decision effectively severed the law of

22 WATER LAWS COMM., *supra* note 18, at iv–v.

23 152 Eng. Rep. 1223 (Ex. 1843).

24 *Id.* at 1233.

surface water from the law of groundwater for almost 100 years, despite the implausibility of the "unknowability" premise, even at the time it was penned.[25] As in England, the independence of surface water law and groundwater law persisted in most American jurisdictions until the late twentieth century despite the certainty provided by the science of hydrogeology several decades earlier that surface water and groundwater were intimately linked.[26] The degree of interaction was (and still is) expensive to ascertain,[27] but it is knowable with sufficient precision to model likely interactions at an expense that seldom will be beyond the reach of most large volume water users.[28]

Despite the certain knowledge that surface water and groundwater often were interconnected, water law played ostrich, putting its head in the sand and failing to account for the linkage. In both East and West, user conflicts arose in which competing usufructuary entitlements were claimed under surface water law and groundwater law.[29] A thorough mid-twentieth century study of case law by Professor Davis made it plain that neither region's law had a consistent answer to the problem created by having two independent bodies of law, one for surface waters and one for groundwater, creating simultaneous entitlements to the same hydrologically linked water.[30] As late as 1973, the National Water Commission was still describing the lack of integration of groundwater and surface water entitlements as one of the nation's three most critical groundwater issues.[31] In the East, common law usufructuary entitlements to water have never been quantified with precision.[32] Importantly, the states (both East and West) all claim to own the water and grant only rights of use (usufructs), not rights to the corpus of the water in place.[33] Under surface water riparianism, when asked the extent of

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[25] *See* R. Timothy Weston, *Harmonizing Management of Ground and Surface Water Use Under Eastern Water Law Regimes*, 11 U. DENV. WATER L. REV. 239, 245–46 (2008). The details or precise mechanism may have been unknown or incompletely understood in 1843, but the cause and effect relationship was patently obvious, as when opening a well on one parcel caused the nearly simultaneous failure of a neighboring well or loss of flow in a stream. *See Acton*, 153 Eng. Rep. at 1232–33 (finding that pits dug near a stream had reduced the water level of that stream).

[26] *See, e.g.*, Joseph W. Dellapenna, *Developing a Suitable Water Allocation Law for Pennsylvania*, 17 VILL. ENVTL. L.J. 1, 59–61 (2006).

[27] *See* SAX, THOMPSON, LESHY & ABRAMS, *supra* note 1, at 407–11.

[28] Peter N. Davis, *Wells and Streams: Relationship at Law*, 37 MO. L. REV. 189, 234–35 (1972); *see also* Herman Bouwer & Thomas Maddock, III, *Making Sense of the Interactions Between Groundwater and Streamflow: Lessons for Water Masters and Adjudicators*, 6 RIVERS 19, 19–30 (1997) (describing the interactions between surface and groundwater and techniques to analyze such interactions).

[29] *See, e.g.*, Collens v. New Caanan Water Co., 234 A.2d 825, 828, 830–31 (Conn. 1967); Collier v. Ariz. Dep't of Water Res., 722 P.2d 363, 364–66 (Ariz. App. 1986).

[30] Davis, *supra* note 28, at 205, 209, 233–34.

[31] NAT'L WATER COMM'N, WATER POLICIES FOR THE FUTURE: FINAL REPORT TO THE PRESIDENT AND TO THE CONGRESS OF THE UNITED STATES 232–33 (1973).

[32] *See* TARLOCK, *supra* note 21, § 3:69.

[33] *See id.* §§ 4:6, 5:18. This source discusses some "semi-exceptions" to the nonownership of corpus. The first is the rule of capture groundwater regimes, once reduced to possession (i.e., once pumped and controlled) that corpus does belong to the pumper, but water still in the

a riparian's right to use water, the answer would be something like this: A right to make a reasonable use of the water taking into consideration the reasonable correlative rights of co-riparians to use the same waterbody.[34] Under the two prevailing Eastern groundwater doctrines, the view that follows the Restatement (Second) of Torts mimics the surface water law, and the other, the American Reasonable Use Rule, allows unlimited use on the overlying tract for a legitimate purpose.[35]

The Regulated Riparianism Model Water Code[36] solves the problem of integrating groundwater and surface water forthrightly:

> In order to promote efficiency, equity, order, conjunctive management, and stability in the utilization of the water resources of this State over time, this Code and all orders, permit terms or conditions, or regulations issued pursuant to this Code, are to be interpreted to achieve the policies embodied in this Code *and to conform to the physical laws which govern the natural occurrence, movement, and storage of water*.[37]

The Commentary on that section also explains that one purpose of the chosen language is to ensure that water management is directed toward "ensuring conjunctive management of surface and underground waters."[38] Conjunctive management goes beyond avoidance of dual entitlement to the same water—it also facilitates maximum utilization, by, at times, requiring water users whose rights were created in relation to surface water to switch to use of groundwater.[39]

In the East, taking that approach is workable. As noted above, the "rights" if any that might be affected by the change are somewhat amorphous. Moreover, there is very little indication that large numbers of

ground remains the state's to allocate via its chosen law. *Id.* § 4:6. A second "semi-exception" is in regard to "developed water" in prior appropriation systems, which is considered the "exclusive property of the developer." *Id.* § 5:18.

34 *Id.* § 3:60 (stating the core principle of reasonable use riparianism: a use will be allowed if "under all the circumstances of the case the use of the water by one is reasonable and consistent with a correspondent enjoyment of right by the other" (quoting Dumont v. Kellogg, 29 Mich. 420, 423 (1874))).

35 *See id.* at §§ 4:6–4:8 (discussing how there are now only two prevailing common law groundwater doctrines found in the East—American Reasonable Use and the Reasonable Use standard). Historically, several states, possibly most, had the Absolute Ownership doctrine as their law, but today that has been replaced in almost all jurisdictions with the possible exception of Vermont. *Id.*

36 WATER LAWS COMM., *supra* note 18.

37 *Id.* at 5 (emphasis added).

38 *Id.*

39 *See* Frank J. Trelease, *Conjunctive Use of Groundwater and Surface Water*, 27B ROCKY MTN. MIN. L. INST. 1853, 1856–63 (1982) (explaining the various ways in which conjunctive use can be used to solve different physical and legal problems within the groundwater and surface water context); Alamosa-La Jara Water Users Prot. Ass'n v. Gould, 674 P.2d 914, 934–35 (Colo. 1983) (holding that it may be appropriate for Colorado to require surface stream appropriators to withdraw underground water to satisfy their surface appropriations).

users will be presently affected by the change. In recent years,[40] there have been very few reported cases of groundwater–stream water conflict, which suggests that at present there are not a large number of cases in which groundwater–stream water conflicts are preventing water users from functioning. Integrating the sources by regulatory fiat before conflict becomes more pronounced limits the cases in which the unification of sources could be challenged by a rights holder as a taking of property.[41] Making a challenge to the unification of sources is still less likely to succeed, since regulated riparianism "grandfathers" existing uses by issuing them permits that continue the use until the permit expires.[42]

In the West, owing to state-by-state differences in groundwater law, two principal paths to unification of rights in single sources have arisen. In states having prior appropriation for both groundwater and surface water, the choice has been, in effect, to integrate the priorities.[43] In states following the American Reasonable Use Rule (a modified rule of capture) for groundwater, the problem has been addressed by a jurisdictional gerrymander that separates the waters subject to each system to eliminate overlapping entitlements.[44] As described more fully, the jurisdictional definition of waters as a solution to hydrologic reality can be more effective (Colorado)[45] or less effective (Arizona).[46] Standing alone, what neither of these solutions to the unification problem achieves, however, is a way to simultaneously ensure that vast amounts of groundwater remain available for use despite the hydrological fact that their utilization would adversely affect the amount of water available to surface water seniors in heavily and overappropriated streams. "In a dry and thirsty land," less than full utilization of the available water is anathema, so along with unification that ensures a single priority system or a separation of the source water into mutually exclusive pools for allocation, there must be additional doctrines developed to prevent letting large amounts of available water go unused.

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40 In Professor Davis's study, *supra* note 28, at 189–92, 216–17, most of the eastern groundwater–stream water cases arose when cities began opening high capacity rural wells that lowered the local water table and affected nearby rural residents who sued. *See, e.g.*, Smith v. City of Brooklyn, 54 N.E. 787, 787–88 (N.Y. 1899); Schenk v. City of Ann Arbor, 163 N.W. 109, 110 (Mich. 1917). In more recent times, city well field activities are regulated and, in general, do not raise property rights issues because cities have been granted the power of eminent domain to address their possible interference with competing water rights. *Cf.* SAX, THOMPSON, LESHY & ABRAMS, *supra* note 1, at 79–86 (noting cities' use of condemnation and statutory preferences to secure water supplies).

41 Courts, too, can fashion an integration. *See, e.g.*, Mich. Citizens for Water Conservation v. Nestlé Waters N. Am. Inc., 709 N.W.2d 174, 201–02 Mich. Ct. App. (2005), *aff'd in part, rev'd on other grounds*, 737 N.W.2d 447 (Mich. 2007).

42 WATER LAWS COMM., *supra* note 18, at 70.

43 *See* TARLOCK, *supra* note 21, §§ 6:4, 6:16.

44 *See id.* §§ 4:7–4:8.

45 *See infra* notes 69–87 and accompanying text.

46 *See, e.g.*, Robert Jerome Glennon & Thomas Maddock, III, *In Search of Subflow: Arizona's Futile Effort to Separate Groundwater from Surface Water*, 36 ARIZ. L. REV. 567, 567–68 (1994); John D. Leshy & James Belanger, *Arizona Law Where Ground and Surface Water Meet*, 20 ARIZ. ST. L.J. 657, 659–60 (1988).

New Mexico, if not the first, was among the earliest states in the West to integrate its groundwater and surface water laws.[47] The legal mechanism was relatively simple. New Mexico's statute books contained two separate authorizations for the granting of water rights from the two sources, both of which operated on the basis of prior appropriation.[48] In *Templeton v. Pecos Valley Artesian Conservancy District*,[49] the New Mexico Supreme Court interpreted the interplay of the surface water and groundwater statutes[50] to require the State Engineer to consider effects on appropriated surface water in issuing permits to use groundwater: "[T]he State Engineer can only grant permits to appropriate waters which are not already appropriated. The appellees had certain rights to appropriated [surface] water. When any later permits were granted by the State Engineer they were subject to the rights of all prior appropriators from the same source."[51] By including as already appropriated water necessary to feed the streams and sustain the rights of the surface water seniors, rights created in the groundwater system were prevented from interfering with the more senior rights created by the surface water system. The two systems were effectively made one.

Having integrated the two systems, New Mexico still had to address the problem of full utilization. To understand this problem, focus for the moment solely on a prior appropriation system for groundwater in which a vast aquifer of thousands of feet in depth has as its most senior users the region's first homesteaders who dug wells to depths of twenty or thirty feet across a wide area. To protect them on the basis of priority would require the State to forbid any wells that lower the water table below the bottom hole of those shallow wells, thereby "trapping" vast reserves of water that otherwise could be extracted and still have plenty of water in the aquifer to satisfy the uses of both the seniors and the interfering juniors. In this particular context, the problem of full utilization is sometimes referred to as

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47 SAX, THOMPSON, LESHY & ABRAMS, *supra* note 1, at 439.

48 N.M. CONST. art. XVI, § 2 ("The unappropriated water of every natural stream . . . within the state of New Mexico, is hereby declared to belong to the public and to be subject to appropriation for beneficial use . . . . Priority of appropriation shall give the better right."); N.M. STAT. ANN. § 72-5-1 (2011) (governing surface water use and appropriation); *id.* § 72-12-1 (governing underground water appropriation).

49 332 P.2d 465 (N.M. 1958).

50 The groundwater statutes included sections 75-11-3 and 75-11-4 of the Statutes of New Mexico, 1953 Compilation (under the 1978 compilation and renumbering these statutes are found at N.M. STAT. ANN. §§ 72-12-3, 72-12-4). The *Templeton* court described the authority of the State Engineer to grant groundwater permits by quoting from those provisions:

> [I]f he finds that there are in the underground stream, channel, artesian basin, reservoir or lake *unappropriated waters* or that the proposed appropriation would not impair existing water rights from the source, . . . grant the application and issue a permit to the applicant to appropriate all or a part of the waters applied for, *subject to the rights of all prior appropriators from the source*.

Templeton, 332 P.2d at 471 (quoting N.M. STAT. ANN. § 72-12-3 (1997)) (emphasis added). The statutes further add: "Existing water rights based upon application to beneficial use are hereby recognized. Nothing herein contained is intended to impair the same or to disturb the priorities thereof." N.M. STAT. ANN. § 72-12A-13 (1997).

51 *Id.* at 472.

the problem of the "shallow senior."[52] The instrumentalist impetus to a solution, as well as the solution itself, are set forth with a degree of narrative transparency by the Idaho Legislature:

> Ground waters are public waters. The traditional policy of the state of Idaho, requiring the water resources of this state to be devoted to beneficial use in reasonable amounts through appropriation, is affirmed with respect to the ground water resources of this state as said term is hereinafter defined and, while the doctrine of "first in time is first in right" is recognized, a reasonable exercise of this right shall not block full economic development of underground water resources. Prior appropriators of underground water shall be protected in the maintenance of reasonable ground water pumping levels as may be established by the director of the department of water resources as herein provided.[53]

"Reasonable" groundwater pumping levels, in this setting, means that the protection based on priority attaches only to wells that are dug to a level set by the State to ensure full utilization. To have their priorities protected, shallow seniors may be required to deepen their wells.[54]

Returning to the context at hand, achieving full utilization after merging the two separate priority systems is problematic in all basins where the discharge of water from a major aquifer provides an important portion of streamflow. In this context the shallow senior is not the early homesteader's shallow well; it is the surface water senior that relies on the hydrologically connected groundwater to provide base flow to the stream. In many regions, surface water rights are more senior and had fully appropriated the streams by the early twentieth century or before.[55] In that setting, any diminution of surface flow will harm the seniors, and in many basins any pumping of the hydrologically linked water will diminish the streamflow. Pumping near a stream can draw so much water toward the bottom of the well that it is comparable to sucking water out of the river.[56] Pumping at a greater distance or at lesser rates can change the hydraulic gradient to slow the rate at which groundwater feeds the base flow of the river. In more severe cases, pumping can lower the water table in the aquifer so that it is now lower than the

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52 SAX, THOMPSON, LESHY & ABRAMS, *supra* note 1, at 440.

53 IDAHO CODE ANN. §42-226 (2003). For a judicial solution to the shallow seniors problem, see *Wayman v. Murray City Corp.*, 458 P.2d 861, 865 (Utah 1969) ("[A]ll users are required where necessary to employ reasonable and efficient means in taking their own waters in relation to others . . . .").

54 Some states have legal mechanisms that shift the cost of well deepening from shallow domestic well operators to commercial and irrigation well operators. *See, e.g.*, Parker v. Wallentine, 650 P.2d 648, 656 (Idaho 1982); Prather v. Eisenmann, 261 N.W.2d 766, 770–72 (Neb. 1978) (applying domestic preference statute, NEB. REV. STAT. § 46-613 (2010), to require compensation).

55 *See* Todd Reeve & Rob Harmon, *Water Restoration Certificates: Voluntary, Market-Based Flow Restoration*, THE WATER REPORT, Sept. 15, 2010, at 1, 1, *available at* http://www.perkinscoie.com/files/upload/COMM_10_09_WaterReport.pdf.

56 *See* THOMAS V. CECH, PRINCIPLES OF WATER RESOURCES: HISTORY, DEVELOPMENT, MANAGEMENT, AND POLICY 145 (2003).

bottom of the stream and no water is discharged into the stream that previously had been fed by groundwater discharge.[57] What is frequently the case, however, is that pumping from the aquifer does not impose a 1:1 reduction in streamflow,[58] so that a total ban on groundwater withdrawal that has an impact on streamflow of a fully appropriated surface stream could force vast quantities of water to remain in the ground untapped without a correspondingly large benefit to the surface water seniors.

For that reason, in New Mexico, administration of the integrated priority system also posed the need to address full utilization. New Mexico solved that problem shortly after the *Templeton* decision was announced, when the legendary State Engineer Steve Reynolds limited a groundwater withdrawal request of the City of Albuquerque seeking water that was hydrologically linked to the fully appropriated Rio Grande to an amount that he calculated would not interfere with the rights of surface seniors.[59]

There are two back stories that accompany New Mexico's integration of its ground and surface water systems. The first is that increasing pumping in the Pecos River valley was interfering with New Mexico's ability to make its required deliveries to Texas at the state line under the Pecos River Compact.[60] The more interesting story of the New Mexico integration of groundwater and surface water, and also closely linked to the thesis of this Article, is an account given by Eluid Martinez in a conversation I had with him about fifteen years ago. Before becoming Commissioner of Reclamation in 1995, he had spent twenty-three years in the New Mexico State Engineer's Office, many of them as an assistant to Steve Reynolds.[61] He recounted Reynolds's explanation to him of the reason New Mexico had "integrated" groundwater and surface water priorities.[62] Coming out of the Dust Bowl and the Great Depression, banks had become hesitant to make loans to New Mexico farmers who could not demonstrate that their water rights were dependable.[63] Shortly after World War II, the introduction of centripetal

57 *See generally id.* at 143–46 (defining concepts such as lift, drawdown, and cone of depression, and discussing how stream depletion factors can be used to analyze well pumping effects on streamflow).

58 *See id.* at 145–46.

59 *See* City of Albuquerque v. Reynolds, 379 P.2d 73, 81, 83 (N.M. 1962); G. Emlen Hall, *Steve Reynolds—Portrait of a State Engineer as a Young Artist*, 38 NAT. RESOURCES J. 537, 543–44 (1998). A different motivation for Reynolds's position in *City of Albuquerque* was the need to reduce groundwater withdrawals in the Rio Grande basin that were causing noncompliance with New Mexico's delivery obligations under the Rio Grande Compact. *See* FRED M. PHILLIPS ET AL., REINING IN THE RIO GRANDE: PEOPLE, LAND, AND WATER 135–40 (2010).

60 New Mexico's struggles in that regard eventually led to litigation in which Texas prevailed. *See* Texas v. New Mexico, 462 U.S. 554, 572–76 (1983).

61 Eluid Martinez, Comm'r, U.S. Bureau of Reclamation, Keynote Address at the 45th Annual New Mexico Water Conference: Water Issues in the West 2 (Dec. 4, 2000), *available at* http://wrri.nmsu.edu/publish/watcon/proc45/martinez.pdf.

62 Interview with Eluid Martinez, Comm'r, U.S. Bureau of Reclamation, in San Diego, Cal. (Feb. 20–21, 1997); *see also* Hall, *supra* note 59, at 542.

63 IRA G. CLARK, WATER IN NEW MEXICO: A HISTORY OF ITS MANAGEMENT AND USE 235 (1987); Susan Christopher Nunn, *The Political Economy of Institutional Change: A Distribution Criterion for Acceptance of Groundwater Rules*, 25 NAT. RESOURCES J. 867, 882 (1985).

pumps made possible large scale groundwater withdrawals sufficient to support a shift from the uncertain yields of dry land farming to the consistently higher yields obtained using irrigation.[64] The addition of so many new high volume groundwater users holding permits issued under the separate groundwater statute raised uncertainty in regard to the reliability of the rights of senior surface water users from streams that were being affected by the pumping.[65] Absent a clear legal precedent protecting the surface water seniors, the banks began to refuse to lend to the surface water seniors, due to fear that the later in time pumpers' rights to the water under the groundwater statute would be deemed superior to that of the surface water users.[66] Under that pressure, Steve Reynolds, who had just become State Engineer in 1955,[67] championed the position accepted in *Templeton* that protected water rights based on seniority regardless of whether the competing claimant was a groundwater pumper or surface water diverter.[68] The need for security of right as a precondition for obtaining the capital necessary to drive a key economic sector drove water law to integrate the legal regimes governing groundwater and surface water.

Other western states have integrated their hydrologically connected groundwater and surface water in other ways, not all equally successfully. The more difficult cases arise in jurisdictions that, unlike New Mexico, do not follow prior appropriation for both surface water and groundwater. Those states do not have available the simple expedient of saying that all rights must respect all priorities already granted in the same water. Colorado is a state in which groundwater law is not based exclusively on priority.[69] Historically and into the present, its groundwater law is based in part on the modified common law rule of capture that inheres in the American Reasonable Use doctrine.[70] Colorado, however, limits the amount that can be withdrawn from any given overlying parcel to the amount of water underlying the parcel.[71] As noted previously, pursuant to that doctrine, an

64 ROBERT GLENNON, WATER FOLLIES: GROUNDWATER PUMPING AND THE FATE OF AMERICA'S FRESH WATERS 25–26 (2002).

65 *See* F. Harlan Flint, *Groundwater Law and Administration: A New Mexico Viewpoint*, 14 ROCKY MT. MIN. L. INST. 545, 557 (1968) (describing the dilemma faced by senior surface water users in light of increased groundwater pumping).

66 *See id.* at 557–58 (explaining the problem faced by senior surface water users and the solution effected by the Templeton Doctrine); *cf.* J.W. Milliman, *Water Law and Private Decision-Making: A Critique*, 2 J.L. & ECON. 41, 47 (1959) (discussing the discouraging effect uncertainty has on investment).

67 Hall, *supra* note 59, at 542 (detailing Reynolds's long career as New Mexico's renowned State Engineer).

68 Templeton v. Pecos Valley, 332 P.2d 465, 471 (N.M. 1958).

69 *See* Colorado Ground Water Management Act, COLO. REV. STAT. § 37-90-102 (2011).

70 *See* Dean Baxtresser, Note, *Antiques Roadshow: The Common Law and the Coming Age of Groundwater Marketing*, 108 MICH. L. REV. 773, 779–81 (2010).

71 "[G]enerally . . . the amount of water available is that amount of unappropriated water, exclusive of artificial recharge, underlying the land owned by the applicant or underlying land owned by another who has consented to the applicant's withdrawal." JOSEPH (JODY) GRANTHAM, COLO. DIV. OF WATER RES., SYNOPSIS OF COLORADO WATER LAW 11 (5th ed. 2011), *available at* http://water.state.co.us/DWRIPub/DWR%20General%20Documents/SynopsisOfCOWaterLaw.pdf. The annual amount allowed to be withdrawn is based on a 100-year useful life of the aquifer. *Id.*

owner of land overlying an aquifer has a right to make use of that water without liability to others so long as the water is used on-tract for any reasonable use.[72] In this context the reasonableness is determined solely in relation to the nature of the use, not in relation to the harm that might be caused to other users of the same water source.[73] Thus, if the groundwater is hydrologically linked to surface flows, a groundwater user exercising rights pursuant to the American Reasonable Use doctrine could adversely affect earlier in time surface water appropriators.

Colorado has avoided that problem by adopting a variegated approach. Indeed, Colorado is an almost perfect example of developmentally driven instrumentalism pushing the law into ingenious solutions that provide both reliable water rights and full utilization in a complex, linguistically baffling combination that efficiently gets the most out of each groundwater basin (although it does create a substantial amount of work for water lawyers, which is not all bad). Viewed from a high level, Colorado solves the initial problem of competing entitlements to the hydrologically connected groundwater and surface water by forcing almost all hydrologically linked water—the pumping of which would affect stream flows—into the surface water system. The simple device was first made part of Colorado's water law by separate groundwater and surface water legislation passed in the 1960s.[74] As construed by the Colorado Supreme Court,[75] the legislature intended to create administrative control over groundwater and water court authority over surface water.[76] This division was necessary to effectuate the Colorado Constitution's guarantee, applicable to the "water of every natural stream,"[77] that the "right to divert the unappropriated waters of any natural stream to beneficial uses shall never be denied."[78] Colorado statutes were explicit: "'Waters of the state' means all surface *and underground water in or tributary to* all natural streams within the state of Colorado, except [designated groundwater, defined in] section 37-90-103(6)."[79]

Defining what water was tributary required further effort, with statutes currently defining nontributary groundwater as,

> [G]round water, located outside the boundaries of any designated ground water basins in existence on January 1, 1985,[80] the withdrawal of which will

72 *See supra* note 35 and accompanying text.

73 *See* SAX, THOMPSON, LESHY & ABRAMS, *supra* note 1, at 415.

74 *See* Colorado Ground Water Management Act, COLO. REV. STAT. §§ 37-90-101 to -143 (2011); Water Right Determination and Administration Act of 1969, COLO. REV. STAT. §§ 37-92-101 to -602 (2011).

75 *See, e.g.*, Colo. Dep't Natural Res. v. Sw. Colo. Water Conservation Dist., 671 P.2d 1294, 1307–18 (Colo. 1983) (en banc), *superseded by statute*, COLO. REV. STAT. § 37-92-203 (2011), *as recognized in* Humphrey v. Sw. Dev. Co., 734 P.2d 637 (Colo. 1987) (en banc) (history of tributary and nontributary groundwater in Colorado).

76 *Id.*

77 COLO. CONST. art. XVI, § 5.

78 *Id.* § 6.

79 COLO. REV. STAT. § 37-92-103(13) (2011) (emphasis added).

80 The governance of "designated ground water basins" is another example of Colorado's pragmatic approach to groundwater use maximization. Those basins contain water that is

> not, within one hundred years of continuous withdrawal, deplete the flow of a natural stream, . . . at an annual rate greater than one tenth of one percent of the annual rate of withdrawal.[81]

Adopting so narrow a definition of what hydrologically linked waters are nontributary and thus excluded from surface water administration, if fully enforced, would guarantee no meaningful conflict between water rights claimants under the two competing property regimes. The jurisdictional gerrymander, including all groundwater that has any significant effect on stream flow in the surface water system, integrates the two systems.

Pragmatically, as noted before, adopting a broad view of what waters are tributary to surface streams that have long been fully appropriated risks locking up and preventing utilization of vast amounts of groundwater. Moreover, doing so would run contrary to what long has been the State's water policy, often described by the Colorado Supreme Court as "maximum utilization."[82] As the Colorado Supreme Court perceived the problem, letting the surface water seniors prevent all use of tributary groundwater was tantamount to waste:

> It is implicit in these constitutional provisions that, along with *vested rights*, there shall be *maximum utilization* of the water of this state. As administration of water approaches its second century the curtain is opening upon the new drama of *maximum utilization* and how constitutionally that doctrine can be integrated into the law of *vested rights*. We have known for a long time that the doctrine was lurking in the backstage shadows as a result of the accepted, though oft violated, principle that the right to water does not give the right to waste it.[83]

nontributary. *See id.* § 37-90-103(6)(a). Designated basins principally are ones in which there is little or no recharge so that water being withdrawn is being mined and the maximization issue is how rapidly to allow the water to be removed in order to obtain the greatest benefit of the nonrenewable supply. *See* Fundingsland v. Colo. Ground Water Comm'n, 468 P.2d 835, 839 (Colo. 1970) (en banc). The limits on pumping are imposed via permits issued by the Colorado Groundwater Commission, under a standard that does not allow "unreasonable lowering of the water level . . . beyond reasonable economic limits of withdrawal or use." COLO. REV. STAT. § 37-90-107(5) (2011). To give meaning to that standard, the Commission develops standards for each designated basin, most of which rely on the Three-Mile Circle Test. COLO. REV. STAT. § 37-90-107(5); *see also Fundingsland*, 468 P.2d at 836–37. That test draws a three-mile radius circle around a well for which a permit is sought, and depending on the other characteristics of the aquifer, denies a permit if the combined draft of the wells within the circle will exceed a 40% depletion of the available water with a certain number of years. *Fundingsland*, 468 P.2d at 836. For example, for the Northern High Plains Ogallala Aquifer, the current standard uses the 40%, three-mile approach and assigns 100 years as the measuring time. GRANTHAM, *supra* note 71, at 10. Other basins, such as the one considered in the *Fundingsland* case, have had depletion periods set as short as 25 years. *Fundingsland*, 468 P.2d at 837.

81 COLO. REV. STAT. § 37-90-103(10.5) (2011).

82 Fellhauer v. People, 447 P.2d 986, 994 (Colo. 1968).

83 *Id.*

A number of additional adjustments to the law had to be made, some of which clearly were authorized by statute[84] and some were permitted by the State Engineer.[85] While the latitude given to the State Engineer has now been severely restricted by court decisions and statutory amendments,[86] Colorado also has authorized a principal method for achieving full utilization, the plan for augmentation.[87]

Plans for augmentation permit out-of-priority diversion so long as the person making that diversion increases the water supply to replace those out-of-priority depletions sufficiently to ensure that no harm is done to senior users.[88] In many situations of hydrologically linked groundwater and surface water, as seen in the New Mexico *City of Albuquerque* example, tapping groundwater often does not result in a gallon-for-gallon reduction in surface water flows.[89] Thus, even if a plan for augmentation required immediate purchase of replacement water,[90] if the impact on the stream is far less than 1:1 and the physical location of the out-of-priority use is far enough upstream, return flow from the new use alone might satisfy the augmentation requirement. If the streamflow effects are not to be felt for many years, no immediate replacement water will be needed, with replacements to start at a later date. In all of these cases, the net amount of water being used is increased, which is a more maximal utilization.

Augmentation plans have to be accurate—Colorado measures the amounts of replacement water required to the 1/100th of an acre-foot.[91] To measure groundwater–stream water impacts with that degree of precision requires expensive hydrogeologic data collection and modeling, reaching into the tens of thousands of dollars and more.[92] Add to that the high transaction costs of Water Court adjudication if the plan for augmentation faces challenges by senior users (often institutional parties—such as cities or water districts and user associations—able to spread the cost of litigation).

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84 *See supra* note 50 and accompanying text.

85 *See* Lain Strawn, *The Last GASP: The Conflict over Management of Replacement Water in the South Platte River Basin*, 75 U. COLO. L. REV. 597, 609–19 (2004); Empire Lodge Homeowner's Ass'n v. Moyer, 39 P.3d 1139, 1159 (Colo. 2002) (en banc) (holding that practices allowed exceeded state engineer's authority); *see also* Simpson v. Bijou Irrigation Co., 69 P.3d 50, 71–72 (Colo. 2003) (en banc) (holding that the State Engineer did not exceed his authority when promulgating rules and regulations under his compact rule power, subject to statutory restrictions).

86 *See* Strawn, *supra* note 85, at 620–30. The legislature tightened control over the State Engineer by passing H.B. 02-1414 in 2002 and S.B. 03-73 in 2003, both of which are now codified as part of section 37-92-308. 2002 Colo. Legis. Serv., ch. 151 (West) (H.B. 02-1414); 2003 Colo. Legis. Serv., ch. 204 (West) (S.B. 03-073); *see also* COLO. REV. STAT. § 37-92-308 (2011).

87 COLO. REV. STAT. § 37-92-103(9) (2011).

88 *Id.* § 37-92-305(8)(c); *Empire Lodge Homeowner's Ass'n*, 39 P.3d at 1150.

89 *See* City of Albuquerque v. Reynolds, 379 P.2d 73, 81 (N.M. 1962).

90 For example, this could be accomplished by buying out a senior upstream agricultural water right and retiring it so that it never leaves the stream.

91 *See, e.g.*, Cache LaPoudre Water Users Ass'n v. Glacier View Meadows, 550 P.2d 288, 290–91 (Colo. 1976) (en banc) (calculating amounts such as 89.97 acre-feet per year necessary for adequate replacement).

92 *See* Martin v. Shell Oil Co., 180 F. Supp. 2d 313, 319 (D. Conn. 2002) (stating that hydrogeologic surveys were cost-prohibitive at a price of $70,000–$100,000).

The total of those fees and the risk of being denied the augmentation threaten to inhibit economic growth and maximum utilization.[93]

This was particularly problematic as it impacted the potential development of residential subdivisions and the associated commercial projects in the ever-growing Denver to Fort Collins Front Range metroplex. Greatly aided by the regional hydrogeology, the legislature acted upon the documented homogeneity of the Front Range Denver Basin aquifers to provide what is essentially a presumption about the required amount of augmentation.[94] The aquifers are artesian aquifers, having their recharge areas high in the Rockies, and, importantly, each has had relatively consistent artesian pressure throughout the areas in which the aquifer was being tapped.[95] Somewhat regardless of the location, sinking a well into one of these aquifers reduces the remaining artesian pressure in the aquifer by an amount proportional to the quantity of water withdrawn.[96] Correspondingly, that reduction in artesian pressure translates into a like effect on the rate of transmission of water from the aquifer into the streams of the East Slope.[97] Thus, the amount of augmentation required for withdrawals (other than those so close to a stream as to directly influence its flow) could be calculated with reasonable accuracy without the need of

93 Augmentation plans still must be scrutinized very closely to ensure that the rights being used to augment the supply are rights to "wet" water that have actually been in use, rather than paper rights from old decrees that actually have not been used or used less water than decreed. This makes some augmentation cases very complex. *See, e.g.*, Burlington Ditch Reservoir & Land Co. v. Metro Wastewater Reclamation Dist., 256 P.3d 645, 661–62 (Colo. 2011) (en banc).

94 *See* Jeffrey J. Kahn, *The Continuing Groundwater Saga—Part 1: Senate Bill 5*, 15 COLO. LAW. 422, 428 (1986) (discussing the requirement of judicial approval of an augmentation plan prior to the use of Denver Basin groundwater to prevent injury to the aquifer); Ramsey L. Kropf, *Colorado Groundwater Law: Colorado's System—Integration (or Not?) of Groundwater and Surface Water*, 49 ROCKY MTN. MIN. L. INST. 7B-1, 7B-4, 7B-6, 7B-8, 7B-11 to -12 (2003) (discussing Colorado's historical view of groundwater and the current protection of senior users' rights through augmentation); Eric Ryan Potyondy, *Sustaining the Unsustainable: Development of the Denver Basin Aquifers*, 9 U. DENV. WATER L. REV. 121, 127, 131–32, 135–36, 148 (2005) (describing the Denver Basin Aquifers, their homogenous classification and treatment by Colorado lawmakers, senior appropriators' rights, and the requirement to protect those rights and reach the goal of 100 years of future aquifer use through the requirement of replacement water).

95 See Potyondy, *supra* note 94, at 123–25, for a discussion of the typical artesian flow from the Denver Basin aquifers, and how different physical characteristics—size, geography, and wall thickness and permeability—impact artesian pressure in the aquifer system. It should be noted, however, that as a result of ever increasing groundwater pumping that has occurred in the Denver Basin since the early 1800s, artesian pressure and natural discharge has decreased significantly over time, thus reducing or eliminating natural discharge into streams and alluvial aquifers. *Id.* at 126. Considerable losses in pressure were observed as early as the mid-1890s, while the number of wells drilled in the Denver Basin by 1895 was nearly 400. RALF TOPPER & BOB RAYNOLDS, COLO. FOUND. FOR WATER EDUC., CITIZEN'S GUIDE TO DENVER BASIN GROUNDWATER 13 (2007), *available at* http://www.waterexchange.com/UserFiles/File/dataRoom/Citizens_Guide_to_Denver_Basin_Groundwater.pdf.

96 Arthur L. Rusch, Note, *South Dakota's Artesian Pressure—Should It Be a Protected Means of Diversion*, 16 S.D. L. REV. 481, 482–84 (1971).

97 *See id.*; *see also* Kropf, *supra* note 94, at 7B-8.

individualized modeling and data collection.[98] By introducing presumptive augmentation amounts, the cost of calculating them individually is avoided in many cases.

Having found an instrumentalist solution for achieving maximum utilization of the hydrologically linked groundwater found on the East Slope near the Denver metroplex—inexpensive administratively calculated augmentation requirements—the legislature, in addition to authorizing such a process, found itself faced with a conundrum of terminology. The groundwater involved was understood to have too much impact on streamflow to qualify as nontributary, but it was to be governed by rules other than those applicable to groundwater that is considered tributary because using the water did not involve mining of a designated basin.[99] The term chosen by the legislature to denominate that developmentally valuable groundwater was to call it "not nontributary."[100]

Thus, by differing paths, the laws of states in the West have converged with laws of states in the East to manage hydrologically linked waters as one. This responds to the instrumentalist imperative of having secure, nonconflicting water entitlements. The methods chosen were different—but both regions now have the means to recognize the physical realities of groundwater and stream water interactions.

III. ELIMINATION OF SITUS OF USE REQUIREMENTS—RIPARIANISM CATCHES UP

In the era of the founding of the American West and up until the time of inexpensive high capacity groundwater extraction, if the vast expanses of nonriparian land were to receive water and be productive, the water law of the region could not forbid uses off the riparian tract.[101] In contrast, in the humid East, where dry land farming (i.e., without irrigation) was practicable, and streams were plentiful, there was not a parallel pressing need for using water away from tracts that were riparian to the watercourse.[102] Even so, a prodevelopmental policy and an inclination to maximize benefits from the use of water invited a relaxation of the strict limitations on the situs of use of water imposed by the traditional common law of natural flow riparianism imported from England.[103] To give a simple example, some uses require

98 TOPPER & RAYNOLDS, *supra* note 95, at 17.

99 *See id.*

100 *Id.*; *see* COLO. REV. STAT. ANN. § 37-90-103(10.7) (2011).

101 Act of Mar. 3, 1877 (Desert Land Act), Pub. L. No. 57-161, ch. 107, 19 Stat. 377 (codified as amended at 43 U.S.C. §§ 321–323, 325, 327–329 (2006)) is a prime example of the promotion of reclamation of arid and semi-arid public lands in western states for private irrigation development. Karl S. Landstrom, *Reclamation Under the Desert-Land Act*, 36 J. FARM ECON. 500, 500 (1954). In addition to giving incentives (via discounted land values) to private developers that promised to irrigate, more than 10 million acres of public lands were patented under the Act through 1953, many of which served as federal sites for supplemental water supply and reclamation projects. *See id.*

102 *See generally* Abrams, *supra* note 1 (discussing the geography of the East and its influence on the development of water rights).

103 *Id.* at 1399–1400.

riparian location, such as for a wharf or the launching of recreational watercraft. Even so, there is no reason why other businesses, farms, or homes are not made more valuable and productive by being allowed to make beneficial use of a nearby lake or stream to which they are not riparian as a source of water supply, rather than obtaining water that can be used to enhance productivity or value in more expensive ways.

In different states at different times, the law relaxed to what is sometimes called the on-tract limitation.[104] Seen from afar, it is as if there was a series of stages in the East, each a little more liberal, allowing more rights to make water use away from riparian parcels. The following table is a rough representation of the stages.

Era	Legal Doctrine	Water Use Result
Early American history	English natural flow riparianism	Any nonriparian use was per se unreasonable and was subject to liability at the suit of any riparian without a showing of injury[105]
Nineteenth century	Pragmatic approach prior to full transition to reasonable use	Liability for a nonriparian use required proof of actual injury[106]
Dawn of the twentieth century eventually becoming almost universal	Reasonable use riparianism	If use made by a riparian, or with the support of a riparian, the situs of use does not make the use unreasonable[107]
Presently arriving	ASCE Regulated Riparianism Model Water Code	Situs of use is irrelevant as long as means of obtaining access to water is lawful[108]

104 TEX. WATER DEV. BD., REPORT 361, 100 YEARS OF THE RULE OF CAPTURE: FROM EAST TO GROUNDWATER MANAGEMENT 12–13 (William F. Mullican, III & Suzanne Schwartz eds., 2004), *available at* http://www.twdb.texas.gov/publications/reports/numbered_reports/doc/R361/R361.pdf.

105 *See, e.g.*, Merritt v. Parker, 1 N.J. 460, 461–63 (1795). Professor Tarlock suggests that this era lasted into the early 20th century in some states. *See* TARLOCK, *supra* note 21, § 3:50 (citing McCarter v. Hudson Cnty. Water Co., 61 A. 710 (N.J. Ch. 1905)).

106 Elliot v. Fitchburg R.R. Co., 64 Mass. (10 Cush.) 191, 193 (1852); Stratton v. Mt. Hermon Boys' Sch., 103 N.E. 87, 88 (Mass. 1913).

107 *See, e.g.*, Gillis v. Chase, 31 A. 18, 19 (N.H. 1892). The RESTATEMENT (SECOND) OF TORTS adopts this rule for uses made by a riparian. RESTATEMENT (SECOND) OF TORTS § 855 (1977). Section 857 confers the same status on uses made by nonriparians pursuant to a right granted by a riparian, a government, or a right as a member of the public. Section 856 adds a gloss that if the harmed party is a nonriparian who does not enjoy a grant from a riparian to use the water, a right granted by government, or a right as a member of the public, there would be no liability even if the use of a riparian is unreasonable.

108 WATER LAWS COMM., *supra* note 18, at 27.

By the end of the progression, treating the ASCE Regulated Riparianism Model Water Code as the eventual template for the East, the legal rule has turned a full 180 degrees to embrace results almost identical to those long achieved by prior appropriation.[109] The East gradually swung from a rule of per se unreasonableness of off-tract uses, to a rule placing no limits on situs of water use other than those that measure the proposed off-tract use as to its reasonableness and permit-worthiness in common with on-tract uses.[110] Eliminating the on-tract requirement allowed the prodevelopmental consequence of making the water available to support all water uses, without regard to contiguity of the water course.

IV. RECOGNITION OF INSTREAM AND COMMUNITARIAN VALUES—PRIOR APPROPRIATION CATCHES UP (AND OREGON GETS AHEAD)

Other than in drought years, the East has enjoyed ample water in almost all its range and has little experience with ecological destruction caused by overuse of the water resource.[111] That is not to say that harbingers of endemic overuse of water are absent in the East—there are many early signs such as saltwater intrusion in coastal areas,[112] dramatic water table declines draining lakes and robbing streams of their flow in places as diverse as Massachusetts and Florida,[113] and an increasing number of riparian and estuarine species that are now endangered or threatened.[114] So while the

109 The remaining difference is in granting access to nonriparians to initiate use. In the West, where there was a threat of self-interest monopolization or charging unreasonable tariffs for entry, private condemnation of access is allowed. In the East, where streams and opportunities for access to water are so plentiful, the only contexts in which there is evidence of concerted action by riparians trying to limit access is in regard to recreational use. *See, e.g.*, Thompson v. Enz, 154 N.W.2d 473, 474–76 (Mich. 1967).

110 The REGULATED RIPARIANISM MODEL WATER CODE adds the caveat that it creates some barriers to interbasin transfers. The Code states: "The Regulated Riparian Model Water Code does not entirely abandon the notion of preferences for uses within the watershed for the Code provides protections against interbasin transfers. The Code provides a special standard for interbasin transfers designed to afford real protection to the basin of origin. . . . Even with those preferences in place, however, the Code does not prohibit interbasin transfers. Rather, the Code provides for compensation to the basin of origin through an Interbasin Compensation Fund." WATER LAWS COMM., *supra* note 18, at 26.

111 *See* Abrams, *supra* note 1, at 1383. This assessment excludes water quality concerns, such as the growing dead zones just offshore of major estuaries, which may well rate as ecological disasters on par with, for example, the devastation caused by the dewatering of the Owens Valley in California. *Cf. id.* (discussing only issues of water demand, not concerns of water quality). *See also, e.g.*, Darryl Fears, *Alarming 'Dead Zone' Grows in the Chesapeake*, WASH. POST, July 24, 2011, http://www.washingtonpost.com/national/health-science/alarming-dead-zone-grows-in-the-chesapeake/2011/07/20/gIQABRmKXI_story.html (last visited Feb. 18, 2011).

112 *See, e.g.*, Martin v. City of Linden, 667 So.2d 732, 737 (Ala. 1995).

113 *See, e.g.*, GLENNON, *supra* note 64, at 60; U.S. Geological Survey, Dep't of the Interior, *Groundwater Depletion Across the Nation* (2003), *available at* http://pubs.usgs.gov/fs/fs-103-03/JBartolinoFS%282.13.04%29.pdf.

114 For example, one of the claims of the downstream states in the Apalachicola-Chattahoochee-Flint River controversy centered on having sufficient water to support mussels and sturgeon. *See, e.g.*, Florida's Memorandum in Support of Motion for Preliminary Injunction

water resource base of the East is far from pristine or un-degraded, at the macro level it still possesses functioning ecosystems. Protecting the public uses and public interest in the East's water resources is predominantly a matter of preventing dewatering and destruction of that resource coupled with selective restorations and enhancement efforts.[115] The legal bulwark for preventing overuse and ecological destruction can be found in the East's emerging water law, while the palliatives for degraded systems require programmatic efforts, some of which, such as Everglades restoration, are already underway.[116]

The commitment to the public interest, including ecological integrity (but leavened with a healthy dose of prodevelopmental instrumentalism), of the Regulated Riparianism Model Water Code could hardly be more prominent. Its initial section proclaims:

> The waters of the State are a natural resource owned by the State in trust for the public and subject to the State's sovereign power to plan, regulate, and control the withdrawal and use of those waters, under law, in order to protect the public health, safety, and welfare by promoting economic growth, mitigating the harmful effects of drought, resolving conflicts among competing water users, achieving balance between consumptive and nonconsumptive uses of water, encouraging conservation, preventing excessive degradation of natural environments, and enhancing the productivity of water-related activities.[117]

The Code further includes an express requirement that the ecologically vital minimum levels and flows not only be set, but be "preserved"[118] by reserving water from allocation.[119] Permits for use of water are limited by an ecologically conceived notion of safe yield.[120] Even more explicitly, for the permitting agency to consider a water use to be reasonable, it must take into account public interest factors, including among others general ecological effects, sustainable development, domestic and municipal uses, groundwater

on Endangered Species Act Claims at 26–27, Alabama v. U.S. Army Corps of Eng'rs, 441 F. Supp. 2d 1123 (N.D. Ala. 2006) (No. CV-90-BE-1331-E).

115 *See* Christine A. Klein et al., *Modernizing Water Law: The Example of Florida*, 61 FLA. L. REV. 403, 442–43 (2009).

116 Mary Doyle, *Implementing Everglades Restoration*, 17 J. LAND USE & ENVTL. L. 59, 62–63 (2001).

117 WATER LAWS COMM., *supra* note 18, at 1–2.

118 "The State shall preserve minimum flows and levels in all water sources as necessary to protect the appropriate biological, chemical, and physical integrity of water sources by reserving such waters from allocation and by authorizing additional protections of the waters of the State." *Id.* at 18.

119 The full scope of protections for the ecological values can be seen in numerous places, including definitions of key terms such as biological integrity, chemical integrity, physical integrity, public interest, and safe yield. *See id.* at 33–53. Permits are limited by the concept of safe yield and reasonable use. *Id.* at 236–37. For the permitting agency to consider a water use to be reasonable it must take into account public interest factors. *See id.* at 240–41.

120 *Id.* at 53, 236–37.

recharge, waste assimilation, other aspects of water quality, and wetland and flood plains.[121]

In the West, adding consideration of instream flows and communitarian interests, sometimes combined under the broad heading of the public interest, faced severe structural legal obstacles, almost from the very beginning. In many western states, particularly the intermountain states,[122] the right to obtain use of water by appropriation is constitutionally protected, exemplified by ringing language like that of the Colorado Constitution: "The right to divert the unappropriated waters of any natural stream to beneficial uses shall never be denied."[123]

Squaring that sort of uncompromising constitutional language with any method that denies appropriation of water to ensure that water remains in place for ecological purposes, or to serve some other communitarian public interest need, is a difficult task indeed. Constitutional amendment, of course, could clear the way, but the research for this Article uncovered no indication that any western state has considered repealing its prior appropriation provision. Thus, if ecology and broader public interests are to be protected by the state against dewatering of streams from unfettered private appropriation, a change is needed. At a popular level, Western attitudes are in the process of changing. Protecting riparian habitats and associated wetlands to some essential degree is accepted now as a widely shared public desideratum,[124] a potential economic boon in sustaining activities taking advantage of the West's great outdoor resources.[125] In some cases, preservation of streamflow is recognized as appropriate policy that supports contemporary forms of economic development, including migration of people into the region and recreational industries, as well as responding to an ever more clearly perceived ecological imperative.[126]

In moving along that path, one of the early methods to preserve instream flows in some western states was to permit appropriated water to be left in place.[127] That work-around had two problems. Linguistically, it might impinge on the "divert and appropriate" right by placing diversions in

121 *Id.* at 240–41 (the subset of factors set out in the text are drawn from subsection (e)(1)–(7)).

122 California does not have such a provision and its unique water history and law have created a mixed system of riparianism and prior appropriation. What the California Constitution does have is a 20th century full utilization amendment added in 1928 that specifically recognizes the public interest. Initially found at CAL. CONST. art. XIV, § 3 (1928), currently codified at CAL. CONST. art. X, § 2.

123 COLO. CONST. art. XVI, § 6.

124 *See generally* NAT'L WATER COMM'N, NEW DIRECTIONS IN U.S. WATER POLICY: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS (1973) (discussing the National Water Commission's finding that national values differ greatly from the time when the federal government took on control of inland waterways).

125 *See, e.g.*, Rebecca Abeln, *Instream Flows, Recreation as Beneficial Use, and the Public Interest in Colorado Water Law*, 8 U. DENV. WATER L. REV. 517, 518 (2005).

126 Janet Neuman, Anne Squier & Gail Achterman, *Sometimes a Great Notion: Oregon's Instream Flow Experiments*, 36 ENVTL. L. 1125, 1138–39 (2006).

127 *See id.* at 1140, 1143.

competition with uses that were not initiated by diversions.[128] Additionally, eliminating the diversion requirement risked monopolization of the waters and speculation by instream appropriators who could obtain valuable water rights with virtually no required investment in order to leave the water in place.

The diversion requirement has a long and somewhat storied history. The most famous diversion requirement case arose early in the twentieth century. It involved a resort near Colorado Springs that invested in various improvements to its property, which was made attractive by a beautiful waterfall.[129] When an upstream power company interfered with the flow to the falls, the resort company lost its claim to have the falls continued for want of a physical diversion of the water.[130] The view that diversion was a required element of making an appropriation persisted throughout many states of the West. For example, the Colorado Supreme Court in 1972 stated: "Other cases, both before and after *Genoa* [*v. Westfall*[131]], have held that the first essential of an appropriation of water is the actual diversion of water with intent to apply it to a beneficial use."[132]

Parsed carefully, the typical western state's constitutional requirement does not forbid other forms of appropriation, only that the one particular method not be denied. Thus, despite the steady stream of decisions requiring diversion, dispensing with the diversion requirement could be justified on nonconstitutional grounds as a revision of the common law of prior appropriation, which traditionally has as its four requirements for perfecting an appropriation: 1) diversion, 2) of unappropriated water, 3) from a natural stream, 4) for beneficial use.[133] At the beginning of the last quarter of the twentieth century, legislatures with the subsequent approval of courts began to resolve the issue in favor of instream appropriation.[134] The leading example, a major event when it was decided, came from Idaho, where the legislature in 1971 permitted a state agency to appropriate instream flows in Malad Canyon under very narrowly described conditions.[135] The statute was challenged in a case most often referred to as *Idaho Parks*.[136] The majority ruled clearly on the point—diversion is not a constitutional requirement for allowing an appropriative right to be created—even though that had never been authorized before the statute being reviewed: "[O]ur Constitution does not require actual physical diversion. We deem it clear that until the

128 It also was argued that instream uses were not beneficial uses, a proposition that today seems extremely wooden. *See, e.g.*, State Dep't Parks v. Idaho Dep't of Water Admin. (*Idaho Parks*), 530 P.2d 924, 927–28 (Idaho 1974).

129 Empire Water & Power Co. v. Cascade Town Co., 205 F. 123, 124–25 (8th Cir. 1913).

130 *Id.* at 125, 129.

131 Town of Genoa v. Westfall, 349 P.2d 370 (Colo. 1960).

132 Lamont v. Riverside Irrigation Dist., 498 P.2d 1150, 1153 (Colo. 1972) (en banc).

133 Reed D. Benson, *Maintaining the Status Quo: Protecting Established Water Uses in the Pacific Northwest, Despite the Rules of Prior Appropriation*, 28 ENVTL. L. 881, 886 (1998).

134 Cynthia F. Covell, *A Survey of State Instream Flow Programs in the Western United States*, 1 U. DENV. WATER L. REV. 177, 179–80 (1998).

135 IDAHO CODE ANN. § 67-4307 (2006).

136 *See, e.g.*, *Idaho Parks*, 530 P.2d 924, 925, 927–28 (Idaho 1974).

time of the enactment of the statute in question herein Idaho's statutory scheme regulating the appropriation of water has contemplated an actual physical diversion."[137]

The dissent of Justice McQuade contended that the words "divert *and* appropriate"[138] were to be read as a single term, and, therefore, forbade appropriations that did not begin with a diversion,[139] a position that has been rejected by several courts that have considered parallel constitutional provisions.[140]

As mentioned above, the second issue related to instream appropriations is preventing them from becoming a wholesale giveaway of the resource to virtually any applicant who can make a showing that the instream flows are beneficial. This has proved to be a nonissue at one level because there is still a diversion requirement in the absence of legislation allowing appropriation without diversion.[141] Far from being naïve about the problem, vested interests favoring continued access to as much unappropriated water as possible have ensured that the legislation allowing instream diversions tightly controls the situations in which it is allowed and the amounts of water that can be appropriated for instream flow.[142] Most states allow only state agencies to make the instream appropriations,[143] and place significant limits on those agencies.[144] For present purposes, the issue is not overgenerous instream appropriation laws, nor is it even whether the laws go far enough to protect vital public instream values. The real issue is that the West has found a way to adapt its water law to include instream values.

Complementing the protection of instream flow via appropriation, more and more states of the West are adopting unabashed public interest elements in their water laws. Among the most often cited exemplars are Alaska[145] and Idaho,[146] neither of which is often described as a hotbed of antidevelopmental zeal and both of which are regarded as strong property rights states. Alaska takes the laundry list approach, setting forth public interest elements that are to be taken into consideration by the state agency in acting on applications for appropriations:

> (a) The commissioner shall issue a permit if the commissioner finds that
>
> (1) rights of a prior appropriator will not be unduly affected;
>
> (2) the proposed means of diversion or construction are adequate;

137 *Id.* at 928.

138 *Id.* at 935 (McQuade, J., dissenting).

139 *Id.* at 934–35.

140 *See, e.g.*, *In re* Application A-16642, 463 N.W.2d 591, 602 (Neb. 1990).

141 *Id.* at 603.

142 *See id.* at 603–06.

143 TARLOCK, *supra* note 21, § 5:28.

144 *See, e.g.*, IDAHO CODE ANN. § 67-4307 (2006) (prohibiting the parks and recreation board from collecting fees for appropriations of waters in Malad Canyon).

145 ALASKA STAT. § 46.15.080 (2010).

146 *See* IDAHO CODE ANN. §§ 42-203A(5)(e), 42-1501 (2003 & Supp. 2011).

> (3) the proposed use of water is beneficial; and
>
> (4) the proposed appropriation is in the public interest.
>
> (b) In determining the public interest, the commissioner shall consider
>
> (1) the benefit to the applicant resulting from the proposed appropriation;
>
> (2) the effect of the economic activity resulting from the proposed appropriation;
>
> (3) the effect on fish and game resources and on public recreational opportunities;
>
> (4) the effect on public health;
>
> (5) the effect of loss of alternate uses of water that might be made within a reasonable time if not precluded or hindered by the proposed appropriation;
>
> (6) harm to other persons resulting from the proposed appropriation;
>
> (7) the intent and ability of the applicant to complete the appropriation; and
>
> (8) the effect upon access to navigable or public water.[147]

Idaho takes a narrative approach to public interest:

> The legislature of the state of Idaho hereby declares that the public health, safety and welfare require that the streams of this state and their environments be protected against loss of water supply to preserve the minimum stream flows required for the protection of fish and wildlife habitat, aquatic life, recreation, aesthetic beauty, transportation and navigation values, and water quality. The preservation of the water of the streams of this state for such purposes when made pursuant to this act is necessary and desirable for all the inhabitants of this state, is in the public interest and is hereby declared to be a beneficial use of such water.[148]

Giving a further dimension to that declaration, a separate simultaneously enacted directive requires that the local public interest also must be taken into account in ruling on permit applications.[149]

As was the case with the historic break from the diversion requirement of prior appropriation law recounted above, the introduction of broad public interest limitations on future water use in the West is a trend that is well underway.[150] While there may be states, such as Colorado, that are later to the game and more resistant to explicitly recognizing those public values as

147 ALASKA STAT. § 46.15.080 (2010).

148 IDAHO CODE ANN. § 42-1501 (2003).

149 IDAHO CODE ANN. § 42-203A(5)(e) (2003 & Supp. 2011) (first discussed and upheld in Shokal v. Dunn, 707 P.2d 441, 447–50 (Idaho 1985)).

150 *See, e.g.*, David H. Getches, *Water Planning: Untapped Opportunity for the Western States*, 9 J. ENERGY L. & POL'Y 1, 33–35 (1988); Douglas L. Grant, *Public Interest Review of Water Right Allocation and Transfer in the West: Recognition of Public Values*, 19 ARIZ. ST. L.J. 681, 683, 685 (1987).

part of the legal fabric,[151] even those states are coming to the conclusion that full utilization of a state's water does not require dewatering of the streams via appropriation:

> In turn, the objective of maximum use administration, under the prior appropriation system, is to achieve "optimum use" in every appropriator's utilization of the water. § 37-92-501(2)(e) ("[A]ll rules and regulations shall have as their objective the optimum use of water consistent with preservation of the priority system of water rights."). *Maximum utilization does not mean that every ounce of Colorado's natural stream water ought to be appropriated; optimum use can be achieved only through proper regard for all significant factors, including environmental and economic concerns.*[152]

In regard to instream flow protection, Oregon has long held a leadership role among the western states. As early as 1915 Oregon forbade out of stream appropriations from the streams that fed the waterfalls in the Columbia River Gorge.[153] In 1955, Oregon passed a law—first in the nation—protecting instream flow for ecological purposes.[154] That law was successful, but in the words of Janet Neuman and two co-authors:

> Oregon's flowing streams are still in jeopardy, despite the fact that the state eventually set more than 550 minimum streamflows by administrative rule. Implementation problems, political compromises, and a deck stacked in favor of consumptive water uses contributed to the failure of Oregon's much-heralded code changes to fulfill their promise of putting fish and other instream water uses on an equal basis with diversionary, consumptive uses.[155]

Quite recently, Oregon has returned to the field with a new experiment that is specifically directed at protecting "peak flows"[156] and "ecological flows"[157] as part of a broader concept of "net environmental public benefit."[158] The statute did not define those terms more specifically, but the major white paper study document[159] exploring those concepts did, defining peak and ecological flows as "instream flows needed to sustain ecosystem functions that native fish and wildlife species require to survive and flourish. These

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151 *See, e.g.*, Aspen Wilderness Workshop, Inc. v. Hines Highlands Ltd., 929 P.2d 718, 725–26 (Colo. 1996) (en banc).

152 Pagosa Area Water & Sanitation Dist. v. Trout Unlimited, 170 P.3d 307, 314 (Colo. 2007) (en banc) (emphasis added). Justice Gregory Hobbs, author of the majority opinion, is a champion of strict adherence to the fundamental precepts of prior appropriation law. *See, e.g.*, *Empire Lodge Homeowners Ass'n*, 39 P.3d 1139, 1146–47 (Colo. 2002) (en banc); Santa Fe Trail Ranches Prop. Owners Ass'n v. Simpson, 990 P.2d 46, 53–55 (Colo. 1999) (en banc).

153 *See* Act of Feb. 9, 1915, ch. 36, 1915 Or. Laws 49.

154 Neuman, Squier & Achterman, *supra* note 126, at 1137–40.

155 *Id.* at 1148 (footnote omitted).

156 OR. REV. STAT. § 541.600(2)(d) (2011).

157 *Id.* § 541.600(2)(e).

158 *Id.* § 541.600(2).

159 PHIL WARD, DIR., OR. WATER RES. DEP'T, PEAK & ECOLOGICAL FLOW TECHNICAL ADVISORY COMM., WHITE PAPER: PEAK AND ECOLOGICAL FLOW; A SCIENTIFIC FRAMEWORK FOR IMPLEMENTING OREGON HB 3369 (2010), *available at* www1.wrd.state.or.us/pdfs/EFTAG_Final.pdf.

streamflows include baseflows and flow protections over a range of flows that provide habitat maintenance and other ecological functions."[160] Drilling deeper, the white paper looks at the types of flows that provide the varied water stages that protect the ecosystem, including concepts of subsistence flow, base flow, high flow pulse, overbank flow, biological triggering flow, and habitat maintenance flow.[161] For now, the new standard is not widely applicable because the 2009 legislation that added these provisions, Oregon H.B. 3369,[162] limited their applicability to water projects receiving grants and loans from the state.[163]

Common threads are pushing East and West together in the protection of ecological stability. Both regions are demonstrating broad recognition of the disruptive nature of modern developmental uses of water, particularly in light of the added ecological stresses being placed on riparian environments by the unfolding changes in the patterns of water availability and loss of stationarity associated with climate change.[164] In the East, for example, where the effects of dams and diversions are less acute and perhaps less obvious than in the West, the Regulated Riparianism Model Water Code Preface describes the "main threats to the availability of water in the eastern States" as being a result of "the physical and ecological transformation by human intervention of water sources and the lands on or in which the sources are found."[165] In the West, adding to the long acknowledged issues of dewatering is the realization that historic patterns of water availability are changing in ways that require further adaptation. For example, the preamble to Oregon H.B. 3369 notes as a prominent reason for its enactment that, "climate change is expected to alter the timing and form of precipitation in Oregon."[166] Plainly, both East and West are taking a more holistic view of the water resource as they enact the laws that will define the rights to use water into the middle of this century. They are converging in giving greater regard to the public interest in maintaining healthy riparian ecosystems.

V. CONCLUSION

What has been said traces several ways in which the water law of the American East and West have come together despite the fundamental underlying differences in rights formulation. The East still begins its

160 *Id.* at 27.

161 *Id.* at 4–7.

162 H.B. 3369, 75th Leg. Assemb., Reg. Sess. (Or. 2009).

163 One commentator views this limited scope of applicability as the portal to widespread application of these concepts. *See* Douglas MacDougal, *Brave New World of Oregon Water Law: Mandated Peak and Ecological Flows*, MARTEN L. NEWSL., Jan. 20, 2011, http://www.martenlaw.com/newsletter/20110120-oregon-water-law-new-world (last visited Feb. 18, 2012).

164 *See* discussion *supra* notes 111–17, 151.

165 WATER LAWS COMM., *supra* note 18, at ix. The Code does not mention climate change. *Id.* As a member of the drafting committee, I can attest this was a deliberate compromise due to the lack of unanimity of view within the committee at the time of its drafting in the early 1990s.

166 H.B. 3369, 75th Leg. Assemb., Reg. Sess. (Or. 2009)

entitlement system from a perspective that the resource is to be shared among those able to use it; the West, in the main, still begins its entitlement systems based on priority of use. What has changed and led to the convergence is that water is now viewed as a scarce resource in both regions that must be utilized fully to meet as many water needs as possible, wherever located. What has changed is that both East and West have added certainty to their water rights systems by integrating groundwater and surface water. What has changed is that both the East and especially the West, under the rubric of public interest, now insist that the legal entitlement system also must recognize the ecological needs of the watersheds themselves and the societal interest in an equitable sharing of the benefits associated with water use. Looking prospectively, this Article predicts the next major change will be a convergent approach to water triage in the ever-more frequent episodes of regional shortage. More specifically, both East and West will find ways to ensure that their water law protects concentrated human populations, ecosystems, energy, and food production against disaster, usually in that order.[167]

What has not been explored in greater detail is perhaps the most far-reaching example of East and West convergence—as the states of the East move to regulated riparianism, both East and West are moving toward total abandonment of their common law origins to become administered systems featuring quantified water rights. The quantification provides the certainty of right needed to encourage reliance and investment. The administration works proactively to adjudicate rights before they are brought on-line and eliminates the waste and uncertainty of having to initiate a water use as a step in the process of adjudicating its legal viability. Having an administrative body in place, as well as having broad and enforceable planning requirements, creates the possibility of management to carry the community through times of water shortage and economic and ecologic stress induced by drought or other unforeseen water exigencies.

The transition to ever-more managerial systems, although seldom noted, has been quite dramatic. Indeed, when Janet Neuman, James Huffman, and several of the authors in this tribute began their scholarly careers, the water law of both the East and the West were dominated by the common law of riparianism and prior appropriation. And while the water law of the East and the West remain so different at their core, they are very similar in their objectives and, increasingly, in their conceptual solutions to many of water law's most important questions.

167 WATER LAWS COMM., *supra* note 18, at 112, 294–310.